

Notice of Allowability

Application No.

10/805,915

Examiner

Naheed Ejaz

Applicant(s)

WU, STEPHEN

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 30 August 2007.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Reasons for Allowance

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. With respect to claims 1-9: the prior art of record fails to teach or suggest a PLL (Phase Locked Loop) implemented to perform high precision continuous time BPF (Band Pass Filter) tuning, the PLL comprising: a VCO (Voltage Controlled Oscillator) operably coupled to convert the VCO control voltage into a recovered clock, wherein the feedback signal is derived from the recovered clock; wherein the VCO includes a plurality of g_m (transconductance) cells; an amplitude detector that detects an amplitude of the recovered clock and that biases the plurality of g_m cells of the VCO such that the each g_m cell of the plurality of g_m cells operates substantially within its linear operating region; wherein the loop filter is implemented as a LPF (Low Pass Filter) having a resistor and a capacitor connected in series such that the capacitor is shunted to ground; wherein a BPF (Band Pass Filter) control voltage is selected from a node that connects the resistor and the capacitor; and wherein the BPF control voltage determines a tuning frequency of a BPF to which the PLL is communicatively coupled as recited in an independent claim 1 and in combination with other elements of the claim.
4. With respect to claims 10-14: (see reasons for allowance, Office Action, dated:04/25/2007, page # 9, paragraph # 15).

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5. With respect to claims 15-20: the prior art of record fails to teach or suggest a method for performing continuous time tuning to a BPF (Band Pass Filter), the method comprising: oscillating a VCO (Voltage Controlled Oscillator) of a PLL (Phase Locked Loop) at a center frequency of a BPF (Band Pass Filter), wherein the PLL is communicatively coupled to the BPF; adjusting an amplitude of an output of the VCO to ensure that each g.sub.m (transconductance) cell of a plurality of g.sub.m cells of the VCO operates within its respective linear region; selecting an BPF control voltage from a loop filter of the PLL; and providing the selected BPF control voltage from the loop filter of the PLL to the BPF thereby tuning the BPF to operate at its center frequency as recited in an independent claim 15.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Hayashi et al. (2002/0008572) teach transconductance-capacitance filter system.
- Yokoyama et al. (2002/0011896) disclose automatic filter tuning control system.

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- Adachi et al. (5,272,452) teach PLL frequency synthesizer with variable bandwidth loop filter.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naheed Ejaz whose telephone number is 571-272-5947. The examiner can normally be reached on Monday - Friday 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naheed Ejaz
Examiner
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NE
9/27/2007


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER